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EXAMINER	
MOORE, IAN N	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/840,241	RACZ ET AL.	
	Examiner	Art Unit	
	Ian N Moore	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29 which have been renumbed as 1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 14-28* is/are rejected.

7)☒ Claim(s) *12 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 July 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1-22-2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. The oath or declaration, filed on 4-21-2001, is unsigned. It is also noted that the office mail "the notice to file missing parts of nonprovisional application" to the applicant on 6-27-2001 regarding the oath or declaration missing signature.

Drawings

2. Figure 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1, 4, 6, 14-16, 23 and 25 are objected to because of the following informalities. Appropriate correction is required.

Claim 1 recites, "checking by the first node one or more of the checkpoints" in line 6. For clarity, it is suggested to rewrite as "checking one or more of the checkpoints by the first node". Claim 1 also recites, "**a** first node" in line 9. Since "a first node" is already recited in line 1, it is suggested to rewrite as "**the** first node" for clarity.

Claim 4 also recites, "**a** first node" in line 1. Since "a first node" is already recited in claim 1, line 1, it is suggested to rewrite as "**the** first node".

Claim 6 also recites, "**the said** checkpoints" in line 2. For consistency, it is suggested to remove "the".

Claim 14 recites, "**a** checkpoint utilization value or **a** checkpoint usage value" in lines 2-3. Since "**a** checkpoint utilization value or **a** checkpoint usage value" is already recited in claim 11, line 2-3, it is suggested to rewrite as ""**the** checkpoint utilization value or **the** checkpoint usage value" for clarity.

Claims 15 and 16 are also objected for the same reason as stated above in claim 14.

Claims 23 and 25 are also objected for the same reason as stated above in claim 4.

4. **Claim 21** is objected since it depends on the claim that does not exit. Thus, Examiner asserts that claim 21 depends on claim 20.

5. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 23-29 have been renumbered 22-28; consequently, this office utilizes renumbered claims 22-28.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1,2,4,5,19-22,24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Callaway (US 6,275,500).

Regarding Claim 1, Callaway discloses a method (see FIG. 13-14) of communicating between a first node (see FIG. 3, Mater Node M 2) and a second node (see FIG. 3, Slave Node S1 1) in an ad hoc polling based communication infrastructure (see col. 3, lines 40-45; polling based Bluetooth communication), the method comprising steps of:

defining frames (see FIG. 12, data frames for M, S1-S7) for the first and the second nodes (see col. 5, lines 1-7; for mater M and Slaves S1-S7), said frames comprising checkpoints (see FIG. 12, start/end of polling Intervals P1 or P2) wherein;

checking by the first node (see FIG. 3, Master M 2) or more of the checkpoints (see FIG. 3, intervals P1) for presence of the second node (see FIG. 3, S1 1; see col. 3, lines 39-45; Master polls Slave at P1); also see FIG. 13, Step 102, see col. 5, lines 19-23; see FIG. 14, Step 202; see col. 6, lines 14-18);

adjusting a first node (see FIG. 4 and 5, Master M 2) checking intensity (see col. 3, lines 44-45; 47-53; a communication resources such as data rate) in response to results of said checking step (see FIG. 5, F1, acknowledgement from S1 after polling in FIG. 3; see col.

3, lines 62-67); also see FIG. 13, steps 108-110; see col. 5, lines 27-34; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30; Master adjusts the communications speed/rate to slave by switching to high speed channel/link);

and communicating by transmitting a signal (see FIG. 3, a signal F1) from said first node (see FIG. 6, M 2) to said second node (see FIG. 6, S1 1) in accordance with the adjusted first node checking intensity (col. 3, lines 64 to col. 4, lines 5); also see FIG. 13, Step 112, col. 5, lines 30-37; see FIG. 14, steps 210, col. 6, lines 29-30).

Regarding Claim 2, Callaway discloses wherein positions of the checkpoints are substantially periodic (see FIG. 12, start and end positions of polling Intervals P1 or P2 are periodic/cyclic since they are sequence is Master to Slave order; see col. 5, lines 1-7).

Regarding Claim 4, Callaway discloses increasing the first node checking intensity (see FIG. 14, step 210, High speed Channel, HSC; master switches to high speed link/rate/channel) by changing one or more checkpoints to alive checkpoints (see FIG. 14, step 210, by changing to a high speed channel CH 2 to communicate with a slave station causes the intervals P1 to change/activate to activate/alive intervals; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30).

Regarding Claim 5, Callaway discloses wherein said frames are time slot pairs (see FIG. 12, time slot M and S1 pair, M and S2 pair, etc.) for communication between the first and second nodes (see col. 5, lines 1-7).

Regarding Claim 19, Callaway discloses the first node is a master (see FIG. 3, Mater M 2) and the second node is a slave (see FIG. 3, Slave S1; see col. 3, lines 39-45).

Regarding Claim 20, Callaway discloses wherein the first node (see FIG. 3, Master M 2) actively checks for the second node (see FIG. 3, S1 1) by sending a packet (see col. 3, lines 39-45; Bluetooth Master node polls/checks Slave by sending/polling with a polled packet/frame); also see FIG. 13, Step 102, see col. 5, lines 19-23; see FIG. 14, Step 202; see col. 6, lines 14-18).

Regarding Claim 21, Callaway discloses wherein the second node (see FIG. 3, S1 1) passively checks the first node by listening for a packet (see col. 3, lines 39-45; see FIG. 13, Step 102, see col. 5, lines 19-23; see FIG. 14, Step 202; see col. 6, lines 14-18; Bluetooth slave node always revives the polling from the master by listing for a polled packet/frame from the master).

Regarding Claim 22, Callaway discloses a first node checking period is T.sub.(check).sup.(i) (see FIG. 12, interval P1 from M to S7 polling period; see col. 5, lines 1-7) for an i^{th} link of the first node (see FIG. 2 and 3, links between M and slaves).

Regarding Claim 24, Callaway discloses increasing the first node checking intensity in response to an amount user data (see col. 6, lines 15-18; pending user data/message) to be transmitted between the first and second nodes (see FIG. 13, steps 108-110; see col. 5, lines 27-34; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30; Master increases the communications speed/rate to slave by switching to high speed rate/channel for amount/quantity of pending user message).

Regarding Claim 25, Callaway discloses wherein the polling based communication infrastructure is a Bluetooth system (see col. 3, lines 40-45; polling based Bluetooth communication).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Callaway in view of Shepard (US 5,682,382).

Regarding Claim 3, Callaway discloses generating positions of the checkpoints as, the node as described above in claim 1. Callaway does not explicitly disclose pseudo randomly generated. However, Shepard teaches pseduo random scheduler (see FIG. 4, Pseudo Random sequence schedule generator 66) which generates pseudo randomly (see col. 6, lines 50-56; see col. 9, lines 52 to col. 10, lines 4; , lines 12-24.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a pseudo random scheduler/generator, as taught by Shepard in the system of Callaway, so that it would ensure that transmitted packets are not interfered with at the intended receiver without requiring global coordination or synchronization and without requiring that packets lost due to collision be retransmitted, which wasted resources; see Shepard col. 2, line 15-20.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Callaway in view of Watanabe (US 6,731,939).

Regarding Claim 6, Callaway discloses said frames for said checkpoints as described above in claim 1. Callaway does not explicitly disclose each contain one or more of an offset, a time interval, usage data and utilization data. However, Watanabe teaches each frame (see FIG. 8, Bluetooth packet; see col. 8, lines 10-16) contain one or more of an offset (see FIG. 8, clock information CLK 158 contains offset; see col. 8, lines 30-35), a time interval (see FIG. 8, Scan period, SP 158), usage data and utilization data (see FIG. 3, Scan repetition value SR 156) for said checkpoints (see col. 8, lines 10-26).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a Bluetooth packet contains one or more of offset, scan period time interval, scan/checkpoint repetition/usage value, as taught by Watanabe in the system of Callaway, so that it would increase the number of stations which can communicate with a single Bluetooth access point could be provided, a Bluetooth based WLAN system would be better able to be implemented by assigning and synchronizing channels between mobile stations and fixed-size stations; see Watanabe col. 2, line 25-30, 35-40; see col. 3, lines 19-26.

11. Claim 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callaway in view of Doster (US 4,644,468).

Regarding Claim 7, Callaway discloses processing a checkpoint in response to both first node and the second node being present (see FIG. 13, step 110, receiving an acknowledgement from Slave, i.e., both nodes are present) at one of said checkpoints (see FIG. 14, step 210, by changing to a high speed channel CH 2 to communicate with a slave

station causes the master node to process/activate the intervals/checkpoints P1; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30). Callaway does not explicitly disclose increasing a value. However, Doster teaches increasing a checkpoint usage value (see FIG. 7, step 231, increment count) in response to both the first node (see FIG. 2, Bridging node 15-18) and the second node (see FIG. 2, other nodes 12 and 14; see col. 5, lines 30-36) being present at one of said checkpoint (see FIG. 7, step 230, when ACKs are received at the node; see col. 16, lines 11-23).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to increase a value/count at the bridge upon receiving the acknowledgement which indicates the present of the other node, as taught by Doster in the system of Callaway, so that it would lesson signal traffic in the network and simplifies the handling of signals, and ensure the successful data transmission; see Doster col. 16, line 25-40, 35-40; see col. 17, lines 45-55.

Regarding Claim 8, Callaway discloses processing a checkpoint in response to both first node and the second node being present (see FIG. 13, step 110, receiving an acknowledgement from Slave, i.e., both nodes are present) at one of said checkpoints (see FIG. 14, step 210, by changing to a high speed channel CH 2 to communicate with a slave station causes the master node to process/activate the intervals/checkpoints P1; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30). Callaway does not explicitly disclose decreasing a value when either first node or the second node not being present. However, Doster teaches decreasing a checkpoint usage value (see FIG. 7, step 226, decrement count or see FIG. 7, restart the count 235) in response to either the first node (see FIG. 2, Bridging node 15-18) or

the second node (see FIG. 2, other nodes 12 and 14; see col. 5, lines 30-36) not being present (see FIG. 7, steps 234,236, when retry timeout, i.e., the other node is not present or sending ACK; see col. 16, lines 44-63).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to decrease a value/count at the bridge upon not receiving acknowledge or time out from the other node, as taught by Doster in the system of Callaway, so that it would lesson signal traffic in the network and simplifies the handling of signals, and ensure the successful data transmission; see Doster col. 16, line 25-40, 35-40; see col. 17, lines 45-55.

Regarding Claim 9, Callaway discloses processing a checkpoint in response to successful data transmission at one or more of said checkpoints (see FIG. 13, step 110, receiving an acknowledgement from Slave, i.e., successful transmissions) at one of said checkpoints (see FIG. 14, step 206, slaves successfully responds to mater at P1, 208; see col. 6, lines 17-30). Callaway does not explicitly disclose increasing a value. However, Doster teaches increasing a checkpoint utilization value (see FIG. 7, step 231, increment count) in response to successful data transmission at one or more of said checkpoints (see FIG. 7, step 230, when ACKs are received at the node, the transmission is successful; see col. 16, lines 11-23).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to increase a value/count at the bridge upon receiving the acknowledgement which indicates the successful, as taught by Doster in the system of Callaway, so that it would lesson signal traffic in the network and simplifies the handling of

signals, and ensure the successful data transmission; see Doster col. 16, line 25-40, 35-40; see col. 17, lines 45-55.

Regarding Claim 10, Callaway discloses processing a checkpoint in response to successful data transmission at one or more of said checkpoints (see FIG. 13, step 110, receiving an acknowledgement from Slave, i.e., successful transmissions) at one of said checkpoints (see FIG. 14, step 206, slaves successfully responds to mater at P1, 208; see col. 6, lines 17-30). Callaway does not explicitly disclose decreasing a value in response to there having been no data transmission. However, Doster teaches decrease a checkpoint utilization value (see FIG. 7, step 226, decrement count or see FIG. 7, restart the count 235) in response to there have been no successful data transmission at said checkpoints (see FIG. 7, steps 234,236, when retry timeout, i.e., the other node is not sending ACK, and thus is there is no data transmission; see col. 16, lines 44-63).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to decrease a value/count at the bridge upon not receiving acknowledge or transmission or time out from the other node, as taught by Doster in the system of Callaway, so that it would lesson signal traffic in the network and simplifies the handling of signals, and ensure the successful data transmission; see Doster col. 16, line 25-40, 35-40; see col. 17, lines 45-55.

12. Claim 11,14-17, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callaway in view of Momona (US 5,815,660).

Regarding Claim 11, Callaway discloses changing the first node checking intensity in response to an acknowledgment (see FIG. 5, F1, acknowledgement from S1 after polling

in FIG. 3; see col. 3, lines 62-67); also see FIG. 13, steps 108-110; see col. 5, lines 27-34; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30; Master changes the communications speed/rate to slave by switching to high speed channel/link).

Callaway does not explicitly disclose a checkpoint utilization value or a checkpoint usage value. However, Momona teaches a checkpoint utilization value (see col. 12, lines 5-10; a traffic calculated value). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a calculated value for traffic utilization, as taught by Momona in the system of Callaway, so that it would reduce the number of conflicts and provide the success of requirement to start the entry polling has kept the highest rate, and reduce unnecessary entry polling; see Momona col. 2, line 15-20, 45-59.

Regarding Claim 14, Callaway discloses increasing the first node checking intensity in response to checking means (see FIG. 13, steps 108-110; see col. 5, lines 27-34; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30; Master increases the communications speed/rate to slave by switching to high speed channel/link in response to checking/pulling means).

Callaway does not explicitly disclose a checkpoint utilization value or a checkpoint usage value being greater than a predetermined value. However, Momona teaches increasing the first node (see FIG. 16, Master node) checking intensity (see col. 12, lines 14-15; traffic increase signal 196) in response to a checkpoint utilization value (see col. 12, lines 5-10; a traffic calculated value) or a checkpoint usage value being greater than a predetermined value (see col. 12, lines 13-16; predetermine threshold). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a calculated

value being greater than the threshold in order to increase the traffic, as taught by Momona in the system of Callaway, so that it would reduce the number of conflicts and provide the success of requirement to start the entry polling has kept the highest rate, and reduce unnecessary entry polling; see Momona col. 10, line 19-35.

Regarding Claims 15 and 16, Callaway discloses increasing the first node checking intensity in response to checking means (see FIG. 13, steps 108-110; see col. 5, lines 27-34; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30; Master increases the communications speed/rate to slave by switching to high speed channel/link in response to checking/pulling means).

Callaway does not explicitly disclose decreasing the intensity in response to a checkpoint utilization value or a checkpoint usage value being lower than a predetermined value. However, Momona teaches decreasing the first node (see FIG. 16, Master node) checking intensity (see col. 12, lines 20-24-15; traffic decrease signal 197) in response to a checkpoint utilization value (see col. 12, lines 5-10; a traffic calculated value) or a checkpoint usage value being lower than a predetermined value (see col. 12, lines 20-24; predetermine threshold). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a calculated value being lower than the threshold in order to decrease the traffic, as taught by Momona in the system of Callaway, so that it would reduce the number of conflicts and provide the success of requirement to start the entry polling has kept the highest rate, and reduce unnecessary entry polling; see Momona col. 10, line 19-35.

Regarding Claim 17, Callaway discloses increasing the first node checking intensity in response to checking means from among the first node checkpoints being checked (see FIG. 13, steps 108-110; see col. 5, lines 27-34; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30; Master increases the communications speed/rate to slave by switching to high speed channel/link in response to checking/pulling means).

Callaway does not explicitly disclose decreasing the intensity by removing one ore more checkpoints. However, Momona teaches decreasing the first node (see FIG. 16, Master node) checking intensity (see col. 12, lines 20-24-15; traffic decrease signal 197) by removing one ore more checkpoints from among the first node checkpoints being checked (see FIG. 16, Subtraction circuit 191; decrease the traffic signal by subtraction/removing; see col. 12, lines 35-40). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide decreasing the traffic by subtraction/removing, as taught by Momona in the system of Callaway, so that it would reduce the number of conflicts and provide the success of requirement to start the entry polling has kept the highest rate, and reduce unnecessary entry polling; see Momona col. 10, line 19-35.

Regarding Claim 26, Callaway discloses a system comprising a node (see FIG. 3 Master Node M 2; see FIG. 15, see col. 6, lines 16-48) in an ad hoc polling based communication infrastructure system (see col. 3, lines 40-45; polling based Bluetooth communication), the node comprising:

a transmit unit (see FIG. 15, Transmitter 68; see col. 6, lines 53-55) transmitting signals (see FIG. 3, polling signals at P1) to other nodes (see FIG. 2, slaves node S1 and S2; see col. 3, lines 39-45; Master M polls Slaves S1 and S2 at P1);

a receive unit (see FIG. 15, Receiver 54; see col. 6, lines 53-55) for receiving signals (see FIG. 5, F1, acknowledgement from S1 and S2) from the other nodes (see FIG. 5, slaves S1 and S2), said received signals comprising results of checking for presence of the other nodes (see FIG. 5, F1, acknowledgement from S1 after polling in FIG. 3; see col. 3, lines 62-67); also see FIG. 13, steps 108-110; see col. 5, lines 27-34; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30;

a checkpoint information maintenance unit (see FIG. 15, a combined system of demodulator 56, modulator 66, and selector switches 60) in communication with the transmit unit (see FIG. 15, transmitter 68) and the receive unit (see FIG. 15, receiver 54); see col. 6, lines 50-60; and

a checkpoint generation unit (see FIG. 15, processor 58) which generates checkpoints (see FIG. 12, start/end of polling Intervals P1 or P2; see col. 5, lines 1-7) having a node checking intensity (see col. 3, lines 44-45; 47-53; a communication resources such as data rate) based upon the results of checking for presence of the other nodes (see FIG. 5, F1, acknowledgement from S1 and S2 after polling in FIG. 3; see col. 3, lines 62-67); also see FIG. 13, steps 108-110; see col. 5, lines 27-34; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30); see col. 6, lines 60-65).

Callaway does not explicitly disclose a scheduling unit in communication with the transmit unit and the receive unit. However, Momona teaches a node (see FIG. 8, Master

Station) comprising a scheduling unit (see FIG. 8, a combined system of Subscription polling interval control circuit 108 and subscription polling interpolation circuit 106 performs scheduling/pooling interval functions; see col. 11, lines 54-55; see col. 6, lines 36-46) in communication with the transmit unit (see FIG. 8, Transmit circuit 101) and the receive unit (see FIG. 8, Reception circuit 102; see col. 6, lines 26-30); a checkpoint information maintenance unit (see FIG. 8, Polling Table 103; see col. 31-34) in communication with the transmit unit (see FIG. 8, Transmit circuit 101) and the receive unit (see FIG. 8, Reception circuit 102; see col. 6, lines 26-30).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a master station with a combined system of Subscription polling interval control circuit 108 and subscription polling interpolation circuit 106 which performs scheduling/pooling interval functions, as taught by Momona in the system of Callaway, so that it would improve efficient use of the channel by controlling polling signal so as to be transmitted only to the related slave station, and prevent signal conflicts between stations; see Momona col. 1, line 50-59, see col. 2, lines 15-20.

Regarding Claim 27, Callaway discloses wherein the node (see FIG. 4 and 5, Master M 2) checking intensity (see col. 3, lines 44-45; 47-53; a communication resources such as data rate) is adjusted in response to the results of checking for presence of the other nodes (see FIG. 5, F1, acknowledgements from S1 and S2 after polling in FIG. 3, which indicate that the slaves are present; see col. 3, lines 62-67); also see FIG. 13, steps 108-110; see col. 5, lines 27-34; see FIG. 14, Step 204, 206, 208; see col. 6, lines 17-30; Master adjusts/increase the communications speed/rate to slaves by switching to high speed channel/link).

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Callaway in view of van Valkenburg (US 6,775,258).

Regarding Claim 18, Callaway discloses the second node (see FIG. 3, Slave node S1 1) is a member of a first piconet (see FIG. 3, network) as disclosed above in claim 1.

Callaway does not explicitly disclose the second node is simultaneously a member of a first piconet and a second piconet which form a scatternet. However, van Valkenburg teaches the second node (see FIG. 1, Slave 18-4) is simultaneously a member of a first piconet (see FIG. 1, first piconet 12) and a second piconet (see FIG. 1, second piconet 14) which form a scatternet (see col. 4, lines 44-53; a scatterent). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a network topology such as scatterent where a slave station simultaneously to both piconets, as taught by van Valkenburg in the system of Callaway, so that it would improve better routing packet data in an ad hoc scatternet wireless network; it will enable the routing of packet between any pair of nodes in two piconets, i.e. scatterent; and it will provide effective communication between Bluetooth devices positioned within different piconets; see van Valkenburg col. 2, line 19-23, 33-36; see col. 1, lines 59-63.

14. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Callaway in view of van der Tuijn (US 6,683,886).

Regarding Claim 23, Callaway discloses initiating a data transmission from the first node to the second node at a checkpoint at which the second node (see FIG. 13, step 112, master initiating transmission to slave; col. 5, lines 30-37) is expected to be present (see FIG.

5, F1, upon acknowledgement from slave after polling in FIG. 3 that slave is present; see col. 3, lines 62-67).

Callaway does not explicitly disclose waiting to send data packets by the first node until a next checkpoint. However, van der Tuijn teaches waiting to send data packets (see FIG. 4, data buffer 22 and packet scheduler 30; buffer and scheduler performs queuing/waiting to send the data packets) by the first node (see FIG. 3 and 4, master communication unit 14; see col. 4, lines 29-30) until a next checkpoint (see FIG. 4, a channel timer 32 provide timing for transmission; see col. 5, lines 40-43, 45-48) at which the second node (see FIG. 3 and 4, slave communication unit 14; see col. 4, lines 29-30) is expected to be present (see col. 5, lines 30-50; scheduler waits/queues the packets in the buffer until the channel timer indicates the data transfer to the slave when the slave is present); and initiating a data transmission from the first node to the second node (see col. 5, lines 45-60).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide queuing/waiting/scheduling the data packets at the master node until the channel timer indicates the data transfer to the slave when the slave is present, as taught by van der Tuijn in the system of Callaway, so that it would provide a mechanism identifying, prioritizing, and transmission of packets in Bluetooth communication method; and it would provide the link control by scheduling the packets before transmission; see van der Tuijn col. 3, line 35-43; see col. 5, lines 35-40.

15. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Callaway in view of Momona as applied to claim 26 above, and further in view of van Valkenburg (US 6,775,258).

Regarding Claim 28, Callaway discloses the second node (see FIG. 3, Slave node S1 1) is a member of a first piconet (see FIG. 3, network). Neither Callaway nor Momona explicitly disclose the second node is simultaneously a member of a first piconet and a second piconet which form a scatternet. However, van Valkenburg teaches the second node (see FIG. 1, Slave 18-4) is simultaneously a member of a first piconet (see FIG. 1, first piconet 12) and a second piconet (see FIG. 1, second piconet 14) which form a scatternet (see col. 4, lines 44-53; a scatterent). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a network topology such as scatterent where a slave station simultaneously to both piconets, as taught by van Valkenburg in the combined system of Callaway and Momona, so that it would improve better routing packet data in an ad hoc scatternet wireless network; it will enable the routing of packet between any pair of nodes in two piconets, i.e. scatterent; and it will provide effective communication between Bluetooth devices positioned within different piconets; see van Valkenburg col. 2, line 19-23, 33-36; see col. 1, lines 59-63.

Allowable Subject Matter

16. Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 571-272-3085. The examiner can normally be reached on M-F: 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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